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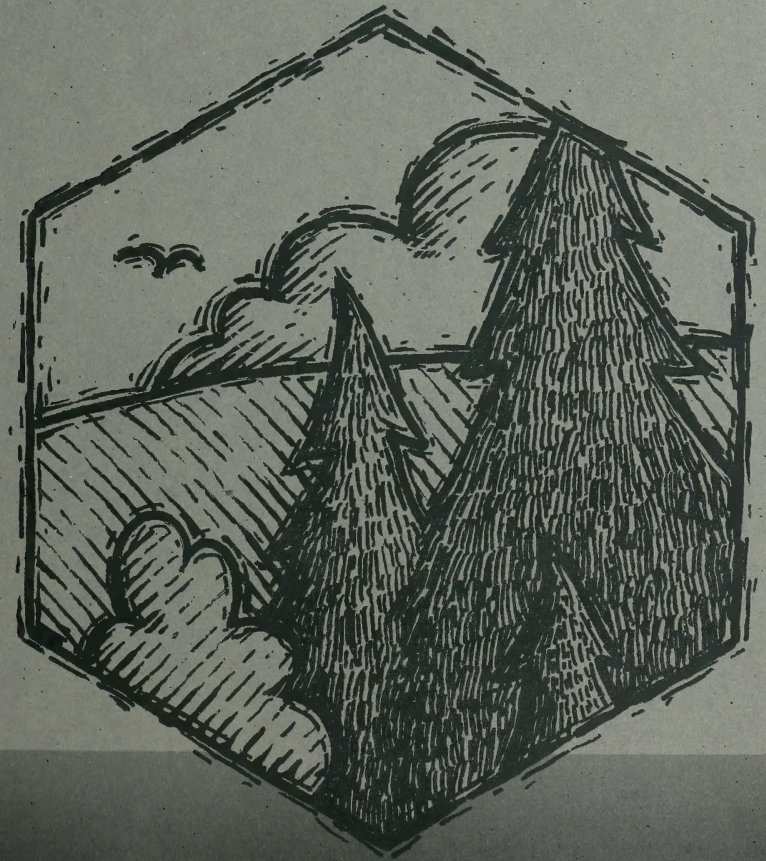
MOONSHINE LAKE

PROVINCIAL PARK

Management Plan



Alberta
ENVIRONMENTAL PROTECTION
Natural Resources Service

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January 27, 1999
Valleyview, Alberta

Approval Statement

The Moonshine Lake Provincial Park Management Plan is the official plan of Alberta Environmental Protection, Natural Resources Service.

The Plan is a commitment by the Northwest Boreal Region to the protection and management of resources in Moonshine Lake Provincial Park and the provision of recreation opportunities within it.

Date Dec 2/98

Pat Long, Regional Director
Natural Resources Service
Northwest Boreal Region

This plan is consistent with the provisions of the Provincial Parks Act and Regulations and with provincial policies, priorities and direction.

Date Dec. 18/98

Morley Barrett,
Assistant Deputy Minister
Alberta Environmental Protection

Acknowledgements

The Moonshine Lake Provincial Park Management Plan is recommended for approval and implementation.

Date Nov 23/98

Ken Zurfluh, Area Manager
Grande Prairie Area
Natural Resources Service

Date 98-10-29

Grant Santo, Ranger in Charge
Moonshine Lake Provincial Park

The team responsible for preparation of the management plan included Monica Kirtley-Wark, Grant D. Santo, and Elaine Nepstad.

Thank you to the park visitors who responded to visitor surveys, to stakeholders who answered questionnaires, and to those who attended open houses. Your interest and support for the park is appreciated.

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https://archive.org/details/moonshinelakepro00albe

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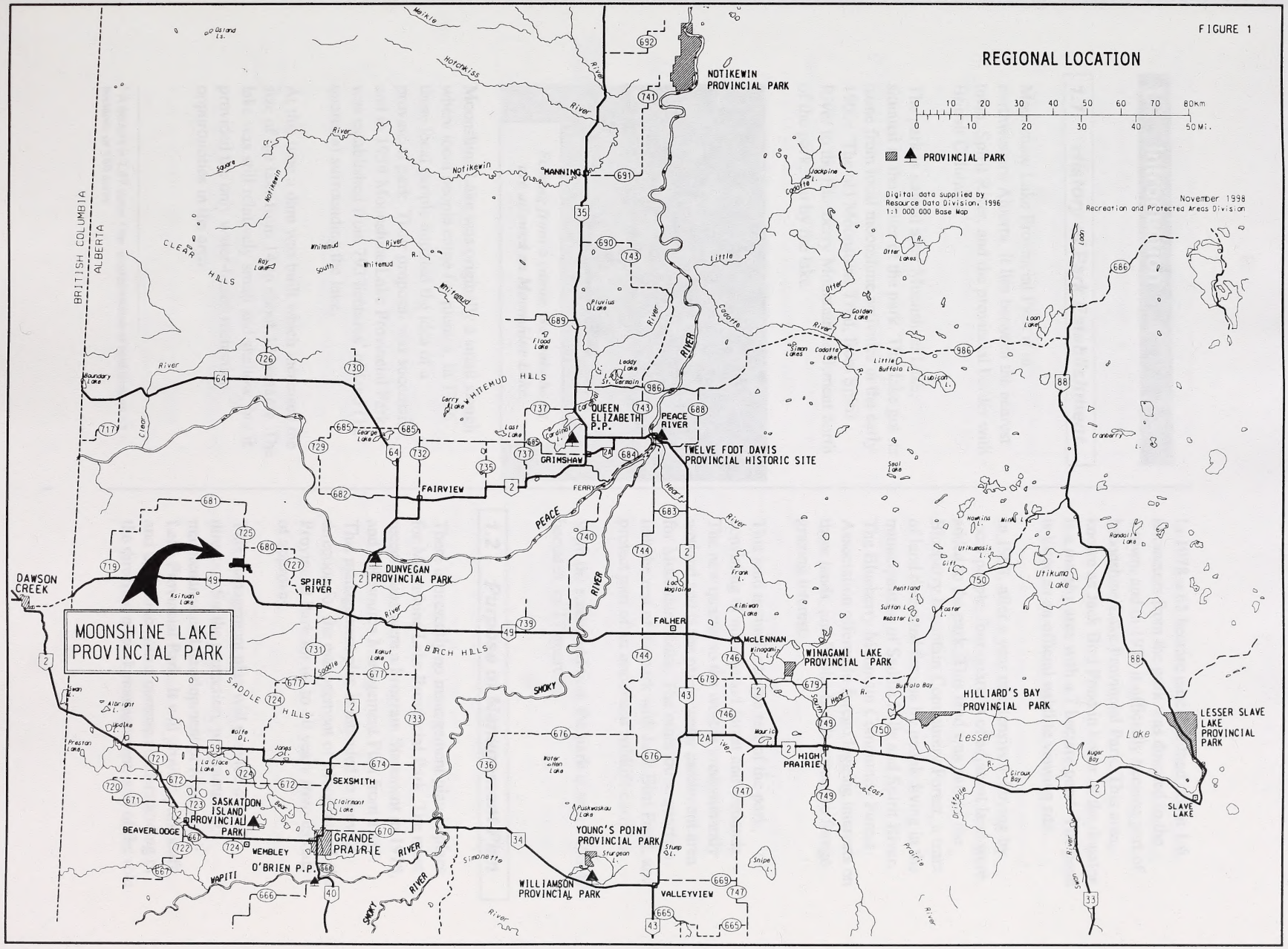
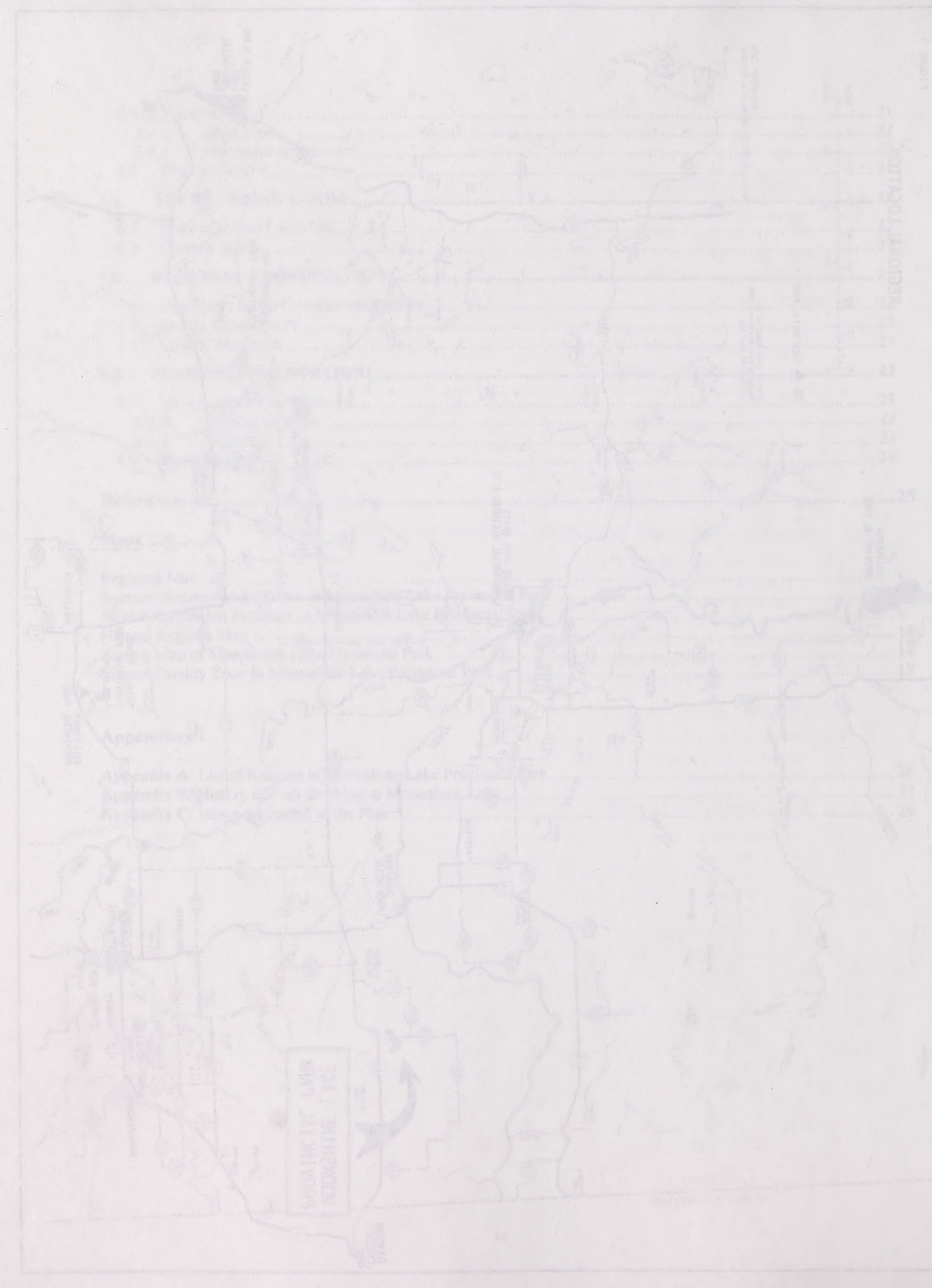

REGIONAL LOCATION
0 10 20 30 40 50 60 70 80Km
0 10 20 30 40 50Mi.
PROVINCIAL PARK
Digital data supplied by Resource Data Division, 1996 1:1 000 000 Base Map
November 1998 Recreation and Protected Areas Division
BRITISH COLUMBIA
ALBERTA
NOTIKEWIN PROVINCIAL PARK
HANNING
QUEEN ELIZABETH P.P.
PEACE RIVER
TWELVE FOOT DAVIS PROVINCIAL HISTORIC SITE
GRIMSHAW
FAIRVIEW
DUNVEGAN PROVINCIAL PARK
SPIRIT RIVER
DAWSON CREEK
MOONSHINE LAKE PROVINCIAL PARK
FALHER
McLENNAN
WINAGAMI LAKE PROVINCIAL PARK
HILLIARD'S BAY PROVINCIAL PARK
LESSER SLAVE LAKE PROVINCIAL PARK
SLAVE LAKE
HIGH PRAIRIE
SEXSMITH
SASKATOON ISLAND PROVINCIAL PARK
BEAVERLODGE
GRANDE PRAIRIE
WEMBLEY
O'BRIEN P.P.
WAPITI
YOUNG'S POINT PROVINCIAL PARK
WILLIAMSON PROVINCIAL PARK
VALLEYVIEW
CLEAR HILLS
WHITEMUD HILLS
BIRCH HILLS
SADDLE HILLS
PEACE RIVER
NOTIKEWIN RIVER
HOTCHKISS RIVER
SMOKY RIVER
WAPITI RIVER
LESSER SLAVE LAKE
UTIKUMA LAKE

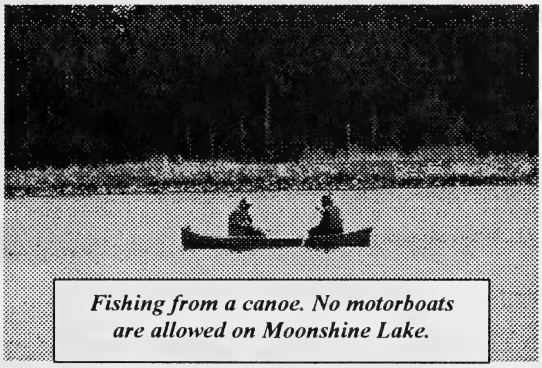


1. Introduction

1.1 History of Park Establishment

Moonshine Lake Provincial Park is in northwestern Alberta. It lies between the nearest town, Spirit River, and the provincial border with British Columbia.

The park is named after Moonshine Lake, situated in the center of the park. This lake got its name from local moonshine activities in the early 1900s. The old Moonshine Trail, from Spirit River to the Blueberry Mountain settlement north of the park, ran by the lake.



Fishing from a canoe. No motorboats are allowed on Moonshine Lake.

Moonshine Lake was originally a small slough where local people came for picnics. In 1956, these local people initiated the idea of a provincial park. Their proposal was successful, and in 1959 Moonshine Lake Provincial Park was established from 793 hectares[1] of land (12 quarters) surrounding the lake.

At this time a dam was built which increased the size of the lake from 14 to about 32 hectares. The lake was still relatively small and shallow, but it provided the only water-based recreation opportunities in the area.

[1] A hectare is 2.47 acres. One quarter-section of land is about 65 hectares, or 160 acres.

In 1978 a 65 hectare parcel of land about 1.6 kilometers from the park was donated to the Crown, and in 1979 it officially became part of Moonshine Lake Provincial Park. This area, known as Jack Bird Pond in honor of the donator, is a marshy area with a 7 hectare pond. The pond is listed as an official wildlife viewing site.

In 1998, after a year of intensive lobbying by local people, four quarters of adjacent land were added to the park. This land was part of the Blueberry Mountain Community Forest, a tract of land dedicated for use by people living in the municipalities of Saddle Hills and Spirit River. The Blueberry Mountain Community Forest Association offered to forego logging interests on these lands, and Public Lands agreed to forego grazing interests.

This land is similar to the rest of the park, consisting of mixedwood forest and wetlands. The new quarter to the west is predominantly wetland and is the prime water catchment area for Moonshine Lake. The other three quarters link the rest of the park with Jack Bird Pond, and protect part of an important wildlife corridor.

With the recent addition, the park is now 1103.49 hectares, or 17 quarters.

1.2 Purpose of Management Plan

There is presently no management plan in place for Moonshine Lake Provincial Park. The most recent plans were a Program Statement in 1978, and a Resource Management Plan from 1985. This management plan is intended to provide direction for the management of Moonshine Lake Provincial Park for up to 10 years from its date of approval.

This management plan will provide overall direction for the protection, programming, maintenance and development of Moonshine Lake Provincial Park. It will provide park staff and the public with a common understanding of the direction of park management, and of the role

of the park within the community and in the province.

More specifically, the management plan will;

- describe the park;
- place the park within Alberta's protected areas network and state its natural history themes;
- identify issues and concerns that relate to management of the park;
- divide the park into zones;
- state protection, heritage appreciation, outdoor recreation and tourism objectives and management guidelines for the park;
- discuss regional cooperation, and
- outline implementation of the plan.

1.3 Public Involvement

Public involvement for this plan was held in two stages. The first stage collected information from visitors and local people about their use of the park, and about concerns and issues they had about park management. The information was collected through a visitor survey administered during the summer of 1995, and a mini-questionnaire sent to local businesses and stakeholders. Survey results are available from the park.

The second stage gave the public the opportunity to participate in the planning process. An open house was held at the Blueberry Mountain Community Hall on November 20, 1997 to review and comment on the draft plan. As well, a vote was taken at a formal meeting held after the open house to assess public support for the addition of land from the Blueberry Mountain Community Forest to the park. All but one vote was in favor of the addition.

After reviews were completed, and comments about the draft plan addressed, it received official approval.

1.4 Ecosystem-based Management

Alberta Environmental Protection has adopted a management approach known as ecosystem-based management. It is a comprehensive approach that involves working with others towards common goals, such as sustainability of the environment. Aspects of this approach include:

- Respect for the park's natural and cultural resources;
- Recognizing the importance of the park environment to the visitor experience;
- Consideration of local and regional economic and social factors;
- Environmentally responsible practices;
- Cooperation with other agencies and adjacent landholders; and
- Application of the principles of precaution and adaptive management – learn by one's mistakes.

These aspects will be incorporated into the management of Moonshine Lake Provincial Park.

2. Overview of Park

2.1 Regional Setting and Access

Moonshine Lake Provincial Park is situated in a small green area that is surrounded by a white zone agricultural area. The nearest settlement is Blueberry Mountain, a few kilometers north of the park. The nearest towns are Spirit River, 35 kilometers to the east, and Dawson Creek, B.C., about 60 kilometers west.

Access to the park is via Highway 49 west from Spirit River for about 30 kilometers to Secondary Road 725, and then north for about 4.5 kilometers to the entrance road to the park.

2.2 Description of Park

The park area is characterized by a fairly level topography, with elevations ranging from 685 meters west of the lake to 730 meters north of the lake. Low knolls with doughnut shaped depressions in their crowns occur in the southeast corner of the park.

Moonshine Lake is the dominant feature, and lies approximately in the middle of the park. It is surrounded by mixedwood forest on the uplands interspersed with wetland areas.

Jack Bird Pond area is fairly level, and has a small pond located on the west side. It is surrounded by wetlands on all but the south side where the land is drier and was previously harvested for hay. Spruce trees have been planted in some of the open area.

Loons on Moonshine Lake

2.2.1. Geology and Soils

Geological resources include the bedrock and the surficial materials that lie between bedrock and soil. These form the soil parent materials.

The park is underlain by the Kaskapau Formation, an Upper Cretaceous marine formation (about 65 million years old) which is part of the Smoky group. It consists of dark gray silty shale and ironstone partings, interbedded in the lower parts with fine-grained quartzose sandstone. There are no bedrock outcroppings in the park.

During the last ice age which began to retreat about 12,000 years ago, the area was covered by the western edge of the Laurentide ice sheet that advanced from the northeast. As this ice sheet retreated, it left behind a blanket of glacial till (unsorted gravel and rock) many meters thick.

As the glacier receded, the meltwater formed large lakes – in this area Lake Peace. This lake took many forms, but during its early stages it covered the park area, depositing fine textured sediments overtop the till. These lake-deposited sediments, called lacustrine sediments, are the predominant surficial material in the park.

Five different soil types are found in the park. Three of them are luvisols, soils with high clay content developed under forests of aspen and white spruce and moderately leached. Gleysol also has a high clay content, and is developed in prolonged water saturation conditions under alder, willow and sedges. The organic soil is found in the wetlands in the park.

2.2.2. Climate

The region has moderately warm summers and relatively cold winters. At Rycroft (40 kilometers southeast) the mean annual temperature is .9°C. Mean annual precipitation is 52.1 centimeters with 66% of this falling as rain. The area has an average frost-free period of 102 days. January is the coldest month with a mean temperature of -20.8°C and July the warmest at 13.7°C. The area typically has heavy snowfalls.

2.2.3. Aquatic Systems

The aquatic system of the park consists of Moonshine Lake, the drainage channels, the wetlands west of the lake, and Jack Bird Pond.

Moonshine Lake was enlarged in 1959 by construction of a 625 meter earthfilled dam on the east side of the lake. At the same time an overflow spillway was constructed on the southwest side of the lake. This ditch needs periodic dredging due to beaver dams and vegetation growth. However, it is seldom used for overflow. A conduit and gatewell located in the center of the dam are used more frequently to

control the lake level. The gatewell has a fish screen on the outlet side to prevent fish loss when it is open. The dam was resurfaced in 1963, 1964 and 1986.

The watershed of Moonshine Lake, mostly to the west, is approximately 24 times larger than the lake itself. Some of this watershed has been added to the park with the inclusion of the quarter on the west side. The lake had no defined inlet prior to 1975, when a drainage ditch was dug west of the lake to collect runoff. This inlet channel was mechanically cleared of vegetation during the winter of 1997/98.

The lake has a maximum depth of 3.5 meters. The water is hard, with a rusty color due to surficial deposits of low-grade iron ore. Water temperature during summer, between 15°C and 21°C, is usually uniform from top to bottom, with a well-oxygenated water column. Moonshine Lake is eutrophic[2], with chlorophyll and phosphorus levels reaching a peak in July or August. As like many shallow lakes in Alberta, it has abundant algae blooms and vegetation growth, especially in late summer.

Moonshine Lake has been stocked since 1965, mostly with rainbow trout as they are a favored sport fish. Winterkill has been a problem, and in 1983 a mechanical bubble style aeration system was installed. A new fountain style system was installed in 1994 as a test case. Both systems remain in the lake for now, and were both used in July-September 1998, a hot, dry period. Aeration did not prevent algae blooms, but it appeared to stop any summerkill of fish, common in un-aerated local lakes.

The lake has no suitable spawning habitat, and must be restocked each year. In 1993 a northern pike infestation threatened the rainbow trout fishery. The lake was treated, and as of 1997 no pike have appeared in the lake. See Appendix B for fish stocking history.

[2] Eutrophic - refers to a generally shallow lake, rich in nutrients such a phosphorus and chlorophyll, with an extensive zone of emergent and submergent plant growth

Jack Bird Pond provides vital nesting habitat for waterfowl and some songbirds. Fish stocking of the pond was discontinued in 1989 because of frequent summer and winter fish kills. Brook stickleback minnows are the only natural fish species found in the pond.

The wetlands consist of much deadfall and standing water and are bordered by willow, alder and birch with grass understory. Infrequently raised bogs occur, covered with a dense black spruce forest with an understory of Labrador tea, feather moss, lichen, and bog cranberry. The marsh areas are transitional vegetative habitats, going from open water to cattails to sedges, then to willows and finally to deciduous woods.

2.2.4. Vegetation and Wildlife

The majority of the park is mixed woodland consisting of white and black spruce, white birch, balsam poplar and aspen. Core samples taken in 1996 of randomly selected trees indicate trees range in age from 80 to 130 years old (personal .reference - Ranger in Charge). The understory includes prickly rose, low bush cranberry, gooseberry, yellow pea vine, wild strawberry, twinflower, and wintergreens. The ground cover in these woods is mainly feather and hair-cap mosses or reed grass.

Birds prevalent in these woodlands include golden-crowned kinglet, white-throated sparrow, purple finch, yellow-rumped warbler, gray jay, blue jays, boreal chickadee, great horned owl, and a number of woodpeckers. Small mammals such as red squirrel, least chipmunk, deer mouse, and meadow vole are common. Large ungulates such as moose, mule deer, white tailed deer and elk are present, as well as carnivores such as black bear, coyote and wolves.

The southwest portion of the park is covered with deciduous woods, primarily trembling aspen. The woods have a rose and willow understory; and wildflowers such as cow parsnip, lungwort, northern bedstraw and yellow pea vine are present. Warbling vireos, least flycatchers, yellow warblers and American redstarts use these

woods. There is also a section of balsam poplar and willow woodland in the extreme south of the park, with rose, reed grass, cow parsnip, wild strawberry, vetch and western Canada violets in the understory. Tennessee warblers, hermit thrushes and Swainson's thrushes use this area.

The wet bog areas of willow, alder and birch harbor a variety of sparrows, sandpipers, blackbirds and warblers. The dry raised parts of the bogs, which consist of mostly dense growths of black spruce festooned with lichens and an understory of Labrador tea and spaghnum moss, harbour solitary vireos, purple finches, ruby-crowned kinglets, gray jays and juncos. Barred owls have been heard in a bog area of the park. The wet areas are home to wood frogs, the Canadian toad, and possibly northern leopard frogs. This area may host the great spurred violet, an uncommon plant in this region.

Birds such as mallard, green-winged teal, sora, American coot, common snipe and red-winged blackbird inhabit the marsh areas of the park. On Moonshine Lake itself horned grebe, common goldeneye, spotted sandpiper and lesser scaup can be seen. A pair of common loons has used the lake for nesting and rearing habitat for the past several years. The marshes and bogs also provide winter habitat for moose, although in summer they generally seek feeding areas that are further from human activities.

Since the early 1990s there have been numerous reported sightings of two different sized turtles at Moonshine Lake. The last confirmed sighting was in June 1998. They appear to be an introduced species, probably painted turtle.

2.2.5. Cultural/Historical

No archeological study has been done of the park, and so far no cultural artifacts have been found. However, it is likely that aboriginal people have inhabited the region for at least 10,000 years.
Prior to European contact, the Beaver and Sekani were the dominant aboriginal groups in northern Alberta. In the 1700s, the Woodland Cree arrived in Alberta, and pushed the Beaver into the upper Peace River area where they still reside. After the hunting resources were depleted and the fur trade began to die, the Beaver Indians began to settle on reservations. The closest reserve to the park is located at Clear Hills, about 50 km to the north of the park.

The first settler in the Spirit River area arrived in 1891. Gradually numbers increased, particularly after the railroad arrived in 1919, and after World War I. Veterans were offered land, with many of them settled in the Blueberry Mountain area.
Moonshine Trail was the old trail that bootleggers used for runs between Blueberry Mountain area and Spirit River. The lake was used as a watering hole for the horses. It is said that some local brew was spilled at the lake and that is how the lake got its name. Remnants of the old trail can still be seen in parts of the park.

Some natural resource development has occurred in what is now the park. Logging has occurred, and two steam-powered sawmills have been in operation, one in 1928 and one in 1945. The first oil and gas exploration of the area began in 1978, but no drilling has occurred in the park.

2.3. Visitor Use

2.3.1. Recreation Opportunities

The park provides opportunities for visitors to participate in the following activities:

Summer Activities

Sport fishing- Annual stocking of rainbow trout provides good fishing on Moonshine Lake.

Camping- There are 110 campsites, 23 with electrical hookups, as well as a large group use area. A shower building was constructed in 1996.

Swimming- Traditionally local people have used Moonshine Lake for swimming. There is a developed beach area.

Boating- Gas powered boats are not allowed on the lake but rowboats, canoes, kayaks, wind sails and electric motors are used.

Hiking- There is over 20 kilometers of trails throughout the park, although not all are well developed. A Watchable Wildlife trail that circles the lake is the most used trail during the summer months. Jack Bird Pond has an interpretative trail along the pond.

Day use - The day use area includes a beach, playground, a large open area, 6 horseshoe pitches, a baseball diamond, tether ball, etc. There is typically a concession in operation on weekends.

Interpretation programs - For special events, long weekends, and on request from school groups the park staff will typically offer an interpretative service, such as a nature walk.

Nature viewing – Jack Bird Pond has two bird viewing platforms connected by an interpretative trail. The trails in both areas provide good opportunities to view nature, and both are Watchable Wildlife areas.

Winter Activities
(38% of those surveyed use the park for winter recreation)

Cross-country skiing - Over 20 km of trails are groomed for classic cross country skiing. The trails are rated novice to intermediate in difficulty.

Ice fishing - Fishing is popular during the winter months.

Skating - There is a lighted outdoor skating rink with an adjacent shelter and fire pit.

Camping - Winter camping is allowed in the day use area; power is not available.

Pick-up hockey on the staking rink in Moonshine Lake Provincial Park

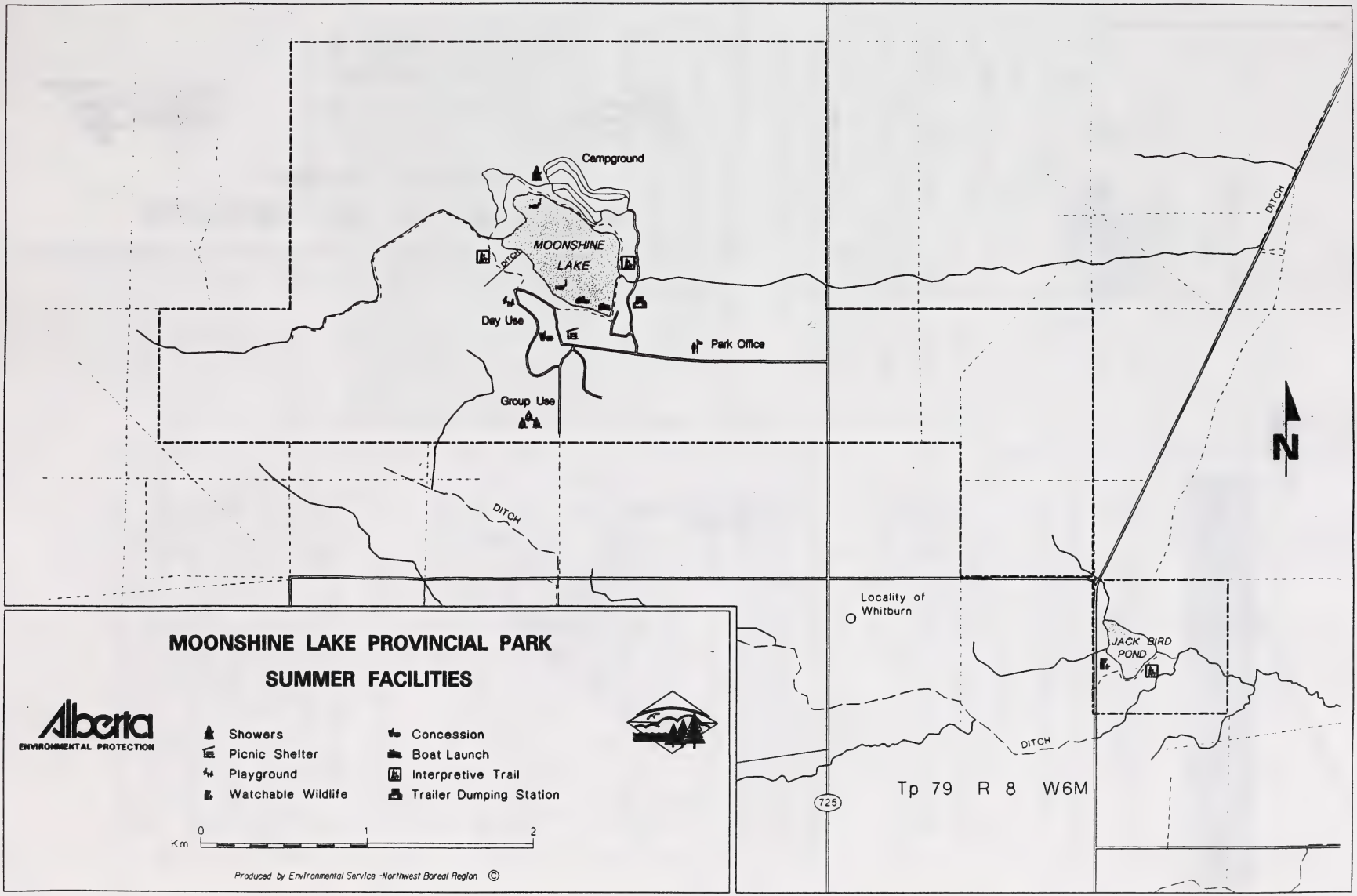
2.3.2. Park Visitation

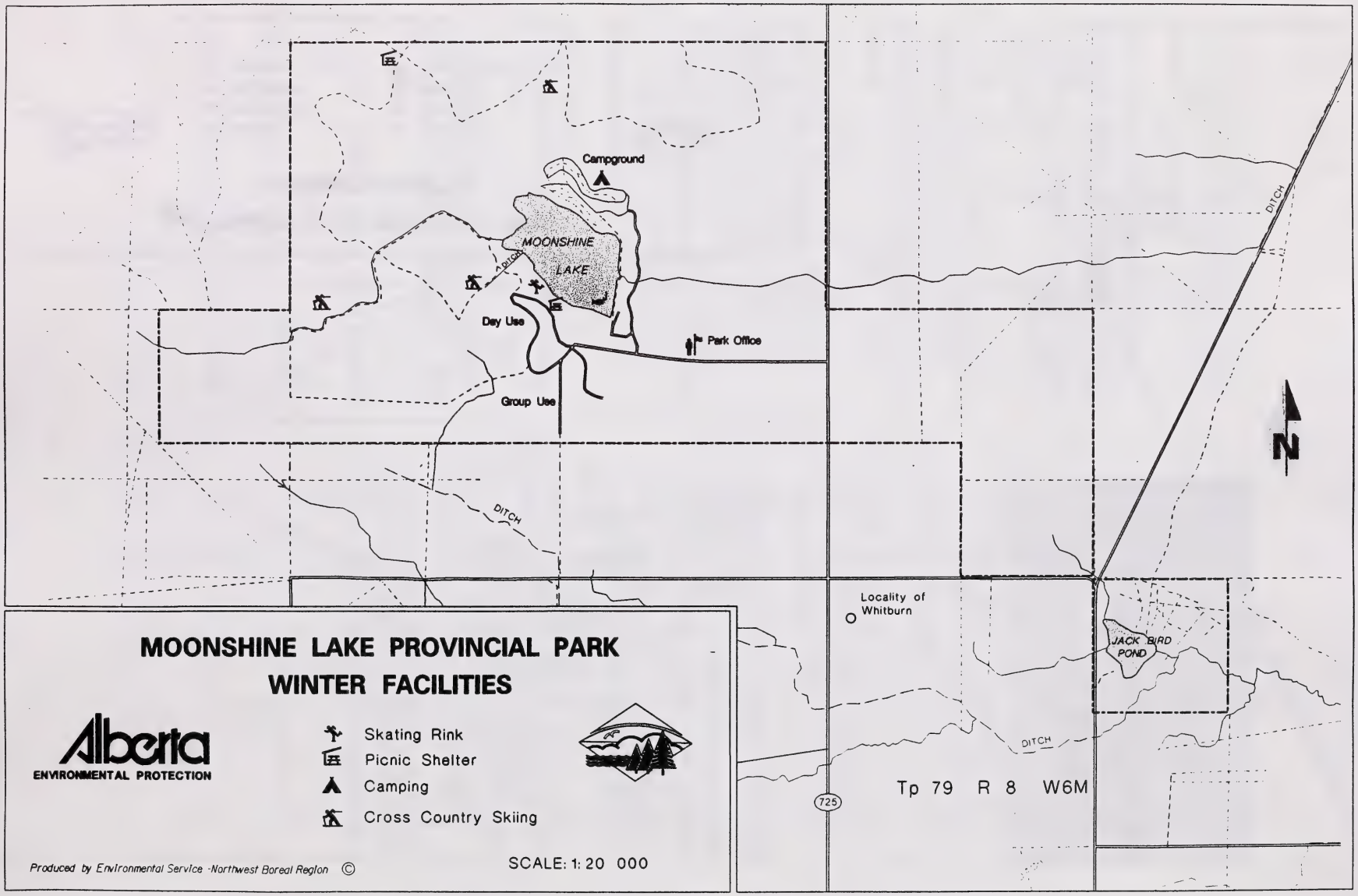
Who are the Visitors?
This general picture of visitation at the park is based on the visitor survey administered in the park in the summer of 1995.

According to the survey, a majority of park users came from the surrounding area from 40 to 150 kilometers away. This included visitors from the Peace River Country, but farther from the park than Spirit River. Most other visitors were equally split between B.C. residents and local residents (Spirit River/Blueberry Mountain residents).

Families made up the majority of visitor groups, followed by couples, single adults, seniors and group campers. Seventy percent of visitors came to Moonshine Lake for a weekend stay. Most users had only visited the park once before.

Visitors preferred to use camping units such as motorhomes and trailers rather than tents. Tents made up only 20% of the type of camping unit used.


Campground
MOONSHINE LAKE
Day Use
Park Office
Group Use
DITCH
DITCH
DITCH
Locality of Whitburn
JACK BIRD POND
725
Tp 79 R 8 W6M
N
MOONSHINE LAKE PROVINCIAL PARK
SUMMER FACILITIES
Alberta
ENVIRONMENTAL PROTECTION
Showers
Picnic Shelter
Playground
Watchable Wildlife
Concession
Boat Launch
Interpretive Trail
Trailer Dumping Station
0
1
2
Km
Produced by Environmental Service -Northwest Boreal Region ©



MOONSHINE LAKE PROVINCIAL PARK
WINTER FACILITIES

Alberta
ENVIRONMENTAL PROTECTION

- Skating Rink
- Picnic Shelter
- Camping
- Cross Country Skiing

SCALE: 1: 20 000

Produced by Environmental Service - Northwest Boreal Region ©

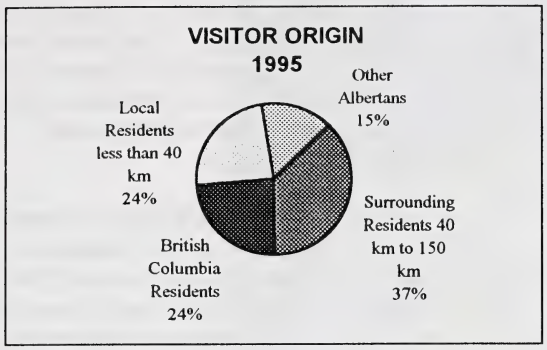

VISITOR ORIGIN
1995
Other Albertans 15%
Local Residents less than 40 km 24%
Surrounding Residents 40 km to 150 km 37%
British Columbia Residents 24%

Figure 1 Visitor Origin

Summer recreation activities ranked from most to least popular were: walking, camping and relaxing, fishing, bicycling, picnicking, wildlife viewing, swimming, baseball, horseshoes, canoeing, and row boating. Winter recreation activities from most to least popular were ice fishing, skating, skiing, and camping.

Park Occupancy

Park occupancy fluctuates from year to year due to weather variations and surrounding community events. For instance, poor fishing from 1992 to 1994 decreased visitor use. Recently attendance has climbed to 1988 levels.

	Occupied Campsite nights	Day Use Party Visits	Group Use Party Visits
1996/97*	3987	11750	180
1995/96	2741	9200	2016
1994/95	2318	6730	224
1993/94	1923	6450	405
1992/93	1641	6550	312
1991/92	1914	6950	131
1990/91	2396	6825	214
1989/90	3086	9010	467
1988/89	2523	8250	194
1987/88	2977	9950	307

*Park Occupancy-Year is from April 1- March 31

Figure 2 Park Occupancy

3.0 Role in Alberta's Network of Protected Areas

3.1. Protected Area Objectives

Natural Resources Service has adopted 4 broad objectives for their protected area program.

Preservation

To preserve and protect in perpetuity a system of representative, special and outstanding natural landscapes and features as well as landscape related prehistoric, historic and cultural resources of Alberta.

Heritage Appreciation

To provide opportunities to explore, understand and appreciate the natural, historical and cultural heritage of Alberta, and to enhance public awareness of our natural environment and our relationship to and dependence on it.

Outdoor Recreation

To provide a variety of intensive and dispersed outdoor recreation opportunities and related facilities and services.

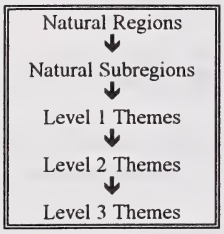
Tourism

To encourage residents and visitors to discover and enjoy the natural, historical and cultural resources of the province through a variety of recreation opportunities, facilities and accommodation services.

3.2 Theme Representation

The Alberta government is committed to protecting representative samples of Alberta's natural heritage. To help select which areas are the best samples, a framework based on natural features has been adopted. This framework is a hierarchy of natural regions, subregions, and natural history themes. Natural regions provide the "big picture" of Alberta's landscapes, such as grasslands, mountains and boreal forest. The subregions and natural history themes are

subdivisions of the natural regions, and provide a more specific picture of smaller areas.



There are six Natural Regions in Alberta - Boreal Forest, Rocky Mountain, Foothills, Canadian Shield, Parkland and Grassland. Differences between these regions are readily apparent by their distinct landform features and vegetation. (See Natural Regions Map on next page).

Each of these Natural Regions has been divided into subregions based on criteria that may vary depending on the Natural Region. The Boreal Forest Natural Region is divided into six subregions that vary with the predominant forest cover, the topography (level, undulating , or hilly), and the mix of uplands and wetlands.

Subregions are further divided into Level 1, Level 2, and Level 3 Natural History themes. Level 1 themes are based on easily observed landforms of subregions, such as wetlands and protected slopes of valleys and ridges.

Level 2 themes are more specific breakdowns of Level I themes. They refer to distinctive habitat types, vegetation, or highly visible geology features. Examples of wetland Level 2 themes in the Boreal Forest subregions are bogs, patterned fens, black spruce forests, or shrublands.

Level 3 themes are finer breakdowns of Level 2 themes. They include specific features such as rare plants and animals, and specific bedrock and landform types, for instance caves and waterfalls.

The themes, because of their detail, are most useful for identifying the natural diversity within Alberta. Level 1 themes can usually be seen on aerial photography maps, while Level 2 and Level 3 themes require detailed biophysical studies. Analysis of these themes can determine which sites in Alberta would be the best samples of our natural heritage.

Moonshine Lake Provincial Park is located in the Dry Mixedwood Subregion of the Boreal Forest Natural Region. Along with other protected areas in this subregion, it protects landscapes which are representative of the Dry Mixedwood Subregion of Alberta.

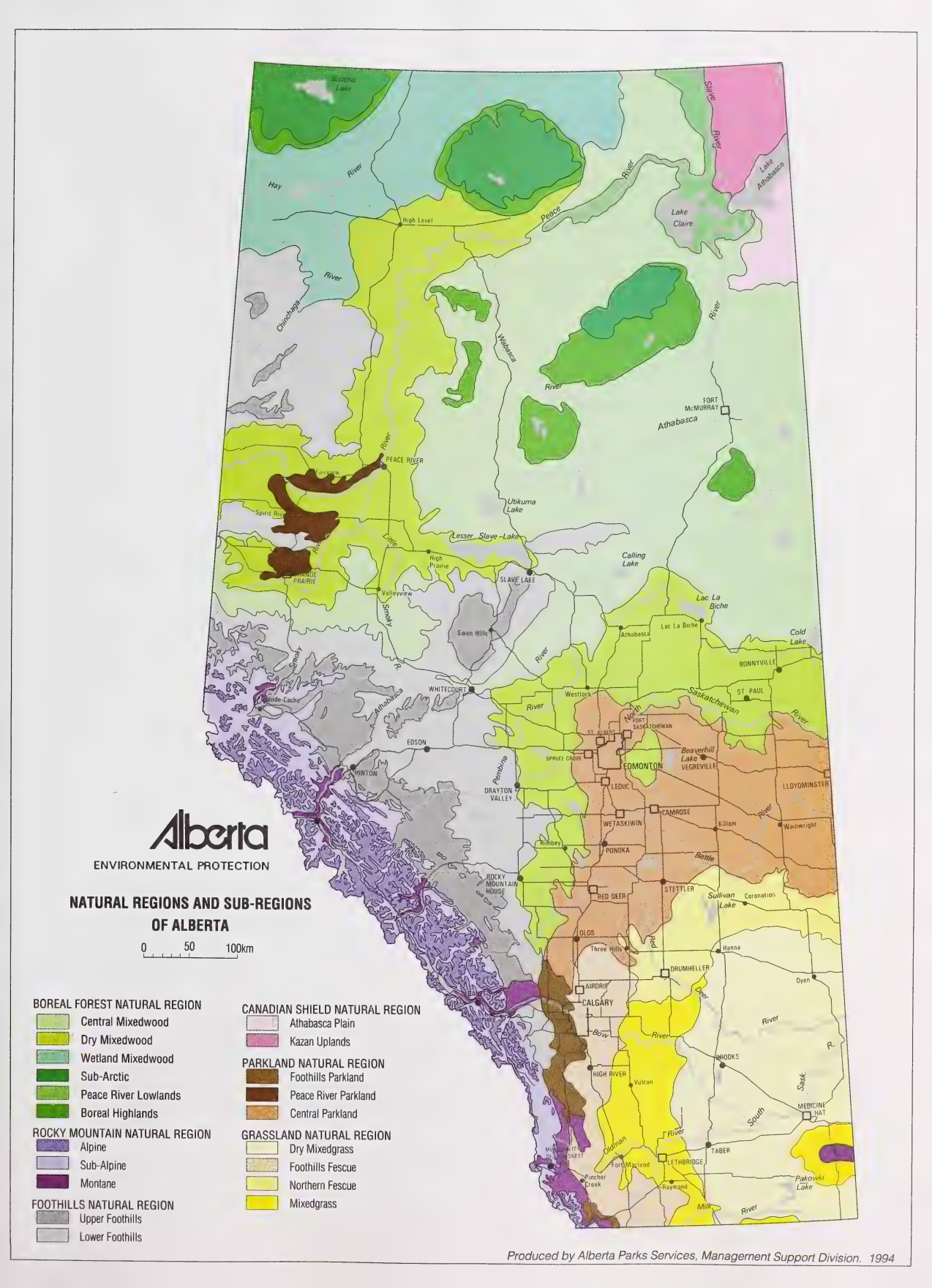
Eleven Level I themes and 46 Level II themes have been identified for the Dry Mixedwood Subregion. Moonshine Lake Provincial Park contributes towards 7 of the Level I themes and to 20 of the Level II themes (see table below).

Natural History Themes
Moonshine Lake Provincial Park
Boreal Forest Natural Region
Dry Mixedwood Subregion

Level I Theme	Level II Theme
Non-Sandy Upland – Glacial Lake Bed	Low Shrubbery(s) Tall Shrubbery(s) Woodland(w)
Non-Sandy Upland-Ground Moraine	Deciduous Forest(s)
Valley/Ridge – Protected Slope	Mixedwood Forest(s) Deciduous Forest(s) Spring(s)
Valley/Ridge – Floor/Stream	Mixedwood Forest(s) Deciduous Forest(s) River/creek(s)
Wetland – Mineral	Marsh(s) Swamp(s) White spruce Forest(s) Shrubland(s)
Wetland – Organic	Bog(s) Black Spruce Forest(s) Shrublands(s) Graminoids(s)
Wetland – Lake	Eutrophic

(w) Theme is well represented in park
(s) Theme is somewhat represented in park

Moonshine Lake Provincial Park contributes around 3% of the total target for protection of the Non-Sandy Upland: Glacial Lake Bed Level 1 theme, which is not yet represented in Alberta's system of protected areas. The park also contributes to several other themes that are at present poorly represented, but the area contributed is a very small percentage of the existing gaps.



Produced by Alberta Parks Services, Management Support Division. 1994

3.3. Legislation/Classification

Natural Resources Service is responsible for the administration and management of protected areas designated under the authority of the Provincial Parks Act and the Wilderness Areas, Ecological Reserves and Natural Areas Act. Under these two pieces of legislation six classes of protected areas can be established: Ecological Areas, Wilderness Areas, Wildlands, Provincial Parks, Natural Areas, and Provincial Recreation Areas. Each protected area is designated within one of these classes on the basis of its contribution to the 4 broad program objectives. The legislation and these classifications are currently being reviewed and may be revised in 1998/99.

3.4 Contributions of Moonshine Lake Provincial Park to Objectives

Moonshine Lake Provincial Park contributes towards fulfilling all 4 of the provincial program objectives.

To Protection Objective

- Protects a sample of the Boreal forest
- Contributes towards protection of Non-Sandy Upland - Glacial Lake Bed Level I Theme, which is still poorly represented in Alberta's system of protected areas.

To Heritage Appreciation Objective

- Provides interpretation and environmental education programs to park visitors.
- Offers opportunity for visitors to experience a boreal forest either on their own or through park programs.

To Outdoor Recreation Objective

- Offers visitors, particularly those from local communities, the opportunity for camping, fishing and day use, and provides quality facilities and services associated with these activities.
- Provides opportunities for winter recreation activities.

To Tourism Objective

- Offers easily accessible camping facilities to tourists travelling in the Peace River Country.
- Provides economic opportunities for the private sector to deliver services in the park.

The purpose, then, of Moonshine Lake Provincial Park is:
To protect a portion of landscapes and associated plants and animals typical of the Boreal Forest Dry Mixedwood Subregion, and to provide opportunities for visitors to participate in a variety of heritage appreciation and outdoor recreation activities which are available in the park.

3.5 Moonshine Lake Provincial Park – Natural Heritage Site

In order to refocus their management direction and satisfy budget requirements, Recreation and Protected Areas Division of Natural Resources Service has implemented a management strategy which supports a protected areas network in Alberta. This strategy groups protected areas into two classifications for management purposes – Natural Heritage Sites and Recreation Facility Sites.

Natural Heritage Sites are intended to contribute primarily to the preservation objective, but usually make a significant contribution to heritage appreciation and may contribute to outdoor recreation and tourism.

Recreation Facility Sites are intended to contribute primarily to outdoor recreation. These sites may be of local importance with respect to tourism and heritage appreciation. Their land bases tend to be small and are often highly modified.

Moonshine Lake Provincial Park is classified as a Natural Heritage Site. It protects at least 10 square kilometers of boreal forest. It also provides high-quality outdoor recreation opportunities to people of the region, and offers interpretation and environmental education throughout the year.

3.5.1 Role of Natural Resources Service

To manage Moonshine Lake Provincial Park as a Natural Heritage Site, Alberta Environmental Protection will:

- Establish operating criteria for facility operation, maintenance and fees;
- Maintain responsibility for promoting the province's natural, historical and cultural resources;
- Continue to provide educational and interpretative programming;
- Provide security services; and
- Retain overall responsibility for resource management.

3.5.2 Role of Private Sector

The role of the private sector in the management of Moonshine Lake Provincial Park is outlined below.

- Natural Resources Service will seek a private sector facility operator to operate and maintain the campgrounds in Moonshine Lake Provincial Park. Until one is found, Natural Resources Service will continue to deliver this service.
- If a facility operator is found, Natural Resources Service will supervise the operator through a facility operating agreement.
- Under a facility operator the campground will continue to be operated and maintained at existing fee structures and operating criteria.
- The facility operator may choose to upgrade existing facilities or to construct new facilities. This development would be approved by the department if consistent with publicly supported management plans and with the public's expectations of the park. This could be done without public review.
- Except for trails, facility development would only take place within the facility zone in the park.
- The private sector will be encouraged to become partners with the park in the delivery of protection, interpretation, site development and operation services. These partnerships could include individuals, clubs, volunteers, and other members of the public. These kinds of partnerships have benefited the Recreation and Protected Areas Program in the past, and will continue to do so.

4.0 Zoning

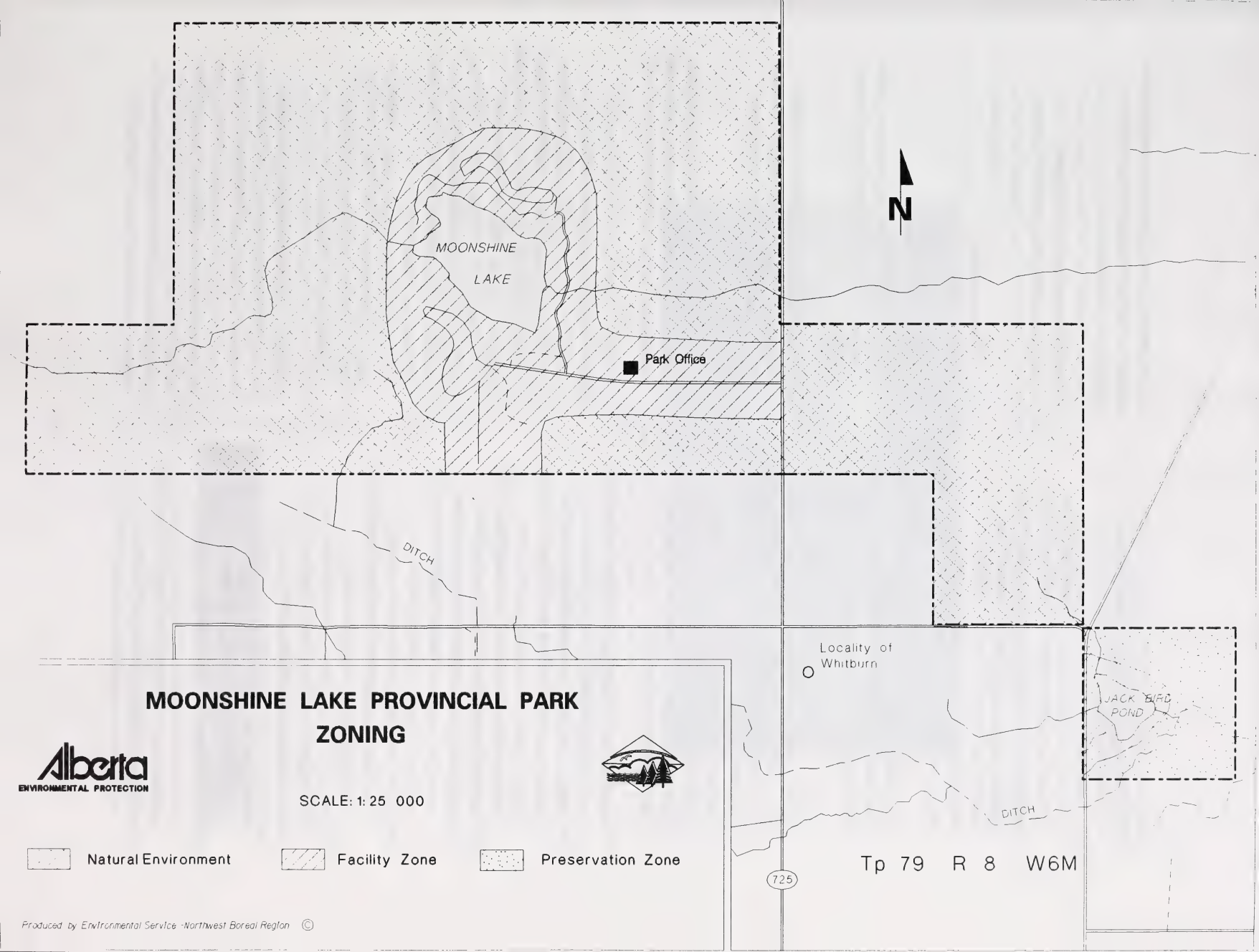
Zoning is a management tool that divides a landscape into units and identifies the intent and objectives of each unit. It is useful because the "mix" of values in a protected area may vary within it. For instance, preservation values may have a higher priority in some areas, and recreation values may have a higher priority in others.

Moonshine Lake Provincial Park is divided into 3 zones – a preservation zone, a natural environment zone, and a facility zone.

4.1 Preservation Zone

The intent of a preservation zone is to protect representative or special landscapes or features for their intrinsic educational, or ecological, values. It provides the highest level of protection of natural heritage values within a park. Low impact visitor activities and scientific research are appropriate if consistent with preservation of the natural heritage values.

The majority of the Jack Bird Pond area is a Preservation Zone.



MOONSHINE LAKE PROVINCIAL PARK ZONING

Alberta
ENVIRONMENTAL PROTECTION

SCALE: 1: 25 000

Natural Environment Facility Zone Preservation Zone

Produced by Environmental Service -Northwest Boreal Region ©

4.2 Natural Environment Zone

The intent of a natural environment zone is to offer a variety of dispersed outdoor recreation and heritage appreciation activities that bring the visitor in close contact with the natural and cultural heritage of the park. Appropriate activities could include hiking, cross-country skiing, and nature appreciation.

The majority of Moonshine Lake Provincial Park is a Natural Environment Zone, except for the facility area surrounding the lake.

4.3 Facility Zone

The intent of a facility zone is to provide land to accommodate a range of moderate to intensive outdoor recreation activities – the area that receives the greatest amount of use in a park. This includes campgrounds, day-use areas, and park offices and shops.

Moonshine Lake and Jack Bird Pond areas both have facility zones. The facility zone at Moonshine Lake Provincial Park includes the facility areas surrounding the lake, and the access road. Facility development occurs on two opposite sides of the lake – the campground is to the north of the lake and day use area to the south. Roads and a hiking trail connect these areas. The group use area is farther to the south and is not directly connected to the lake.

The facility zone at Jack Bird Pond includes the access road and viewing/trail area.

The map on the next page shows the zones in Moonshine Lake Provincial Park.

5.0 Park Objectives and Management Actions

Management of Moonshine Lake Provincial Park will be guided by the ecosystem-based management approach discussed in Section 1.4.

This approach, as well as the park mandate, park objectives, and public input will guide park management in the future.

Below are objectives for the park and management guidelines for achieving them.

5.1 Preservation

5.1.1. Objectives

- ***To protect the variety of landscapes in the park, and their associated vegetation and wildlife.***
- ***To allow natural processes to continue without interference, unless they threaten surrounding land or the recreational values of the park.***
- ***To coordinate management of the natural environment of the park with agencies and individuals responsible for adjacent lands.***

5.1.2 Water and Aquatic Resources

Moonshine Lake and its drainage systems is the core of the park. Sustaining its health is essential to the maintenance of continued fishing and water recreation activities. This will be done by:

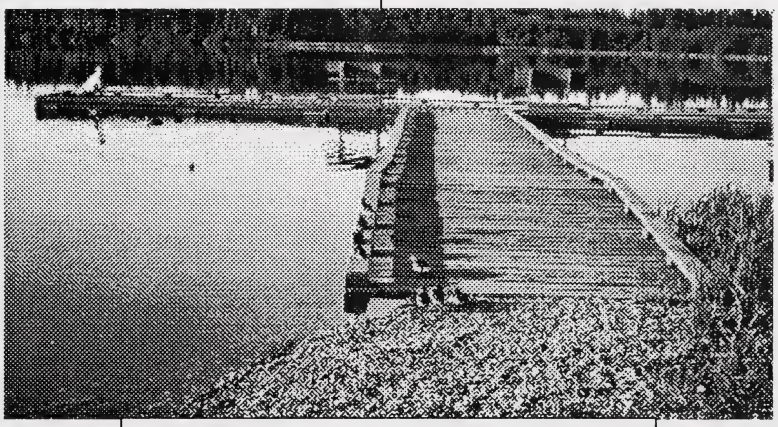
1. Working with land managers to ensure that adjacent land use in the watershed area (west and north of the park) will not affect the health of this water system; and
2. Continued monitoring for water quality as part of a departmental monitoring program. Sampling of the swimming area will also continue weekly in summer.

Moonshine Lake will continue to be stocked annually with rainbow trout. It will be closely monitored for changes in fish productivity and fish habitat. Northern pike appear to have been successfully eliminated from the lake, and both the lake and the channel will be monitored to detect reoccurrence. If detected the pike will be removed by chemical or other means.

Moonshine Lake supports aquatic vegetation, which has on occasion detracted from the enjoyment of swimming, boating, and fishing. This plant growth will be managed only when it interferes with recreational activities. For example, the beach area may require grooming or a mat put down on the lake bottom to discourage plant growth.

Areas of high sensitivity to impacts from visitor use, such as areas containing uncommon plants, or breeding grounds for waterfowl, will be identified and visitor activity discouraged in these areas.

Use of herbicides for control of weeds will follow park policy. This states that use of herbicides



Visitors fish off of this pier on Moonshine Lake

Because of the nature of the lake, algae blooms occur towards late summer. The blooms can cause summer kill of the fish and make swimming unpleasant. Means of controlling the blooms are currently being investigated. One possibility is to activate the aeration system during bloom conditions. This was tried in the 1980s and seemed to control the bloom, but also caused increased aquatic vegetation growth.

5.1.3 Vegetation

In general the vegetation within the park will not be interfered with. The forest communities will be allowed to succeed naturally; for example lodgepole pine and mixedwood communities in the park may evolve to predominantly white spruce communities.

Only in the facility zone will natural succession be interfered with. Here vegetation such as trees hazardous to visitors and property will be managed.

will be restricted to the facility and access zones, and used when public health or safety is threatened, facilities or vegetation are threatened, or to avoid the spread of weeds.

Only a few areas in the park will be mowed. Most open areas will be left in their natural state. If re-vegetation is necessary, only locally native species will be used.

Vegetation along walking trails will be cut back for visitor safety and to promote use.

Noxious weeds such as Canada thistle, toadflax, and common tansy have been located at Jack Bird Pond on the east side of the pond, and have been treated for control. The park will continue to work towards eliminating these weeds.

Much of Jack Bird Pond is being left in a natural state. Only the picnic area, trail and dam are mowed regularly. Spruce seedlings have been planted in open areas. The cattails at the viewing

platform on the west side of Jack Bird Pond are trimmed periodically in the summer.

Wildfire in the park will be suppressed. Park staff provide initial attack for fires within the park, with follow-up from Land and Forest Service. Fire control equipment is located in the park.

The forest in the northeast corner of the park was horse-logged in the winters of 1986 and 1988 to reduce fuel load. Since then, blowdown in the same area has raised fuel load to a level causing concern. An assessment will be conducted, and if the fuel load is considered hazardous, methods to reduce it with the least amount of disturbance to the forest will be investigated. This will be done in cooperation with Land and Forest Service.

5.1.3 Wildlife

The focus of wildlife management will be the protection of habitat for the wide variety of wildlife in the park. Any management action will be considered for its effect on the habitat and consequently on the wildlife of the area.
Bears are sighted in the park, and their activity will continue to be monitored. Bear management and safety will continue to be stressed to park visitors, and a bear education program will still be offered to the public upon request and for special events. Bear-proof garbage receptacles have been installed to reduce attraction to garbage.

Logging activities in the area surrounding the park will create changes in habitat - enhancing habitat for animals like moose and deer and reducing habitat for others, for instance pilated woodpeckers who need large undisturbed areas of mature forest. These changes in habitat may impact wildlife in the park, and park management will attempt to monitor changes that may occur.

Beaver damage due to tree removal and damming is a problem on the inlet and outlet channels and on the campground side of the lake. The inlet channel has culverts and wire mesh installed to mitigate beaver damage. Beaver activity will be monitored and control measures taken if there is a potential to cause flooding that would damage facilities or threaten recreational opportunities.

5.1.4 Cultural Resources

At this time no historical or culturally significant finds have been made within the park. If this occurs, the artifacts or their replicas will remain park property and be utilized for interpretative and educational purposes. Artifact removal is strictly prohibited.

Moonshine Trail is of some cultural and historical significance to the area. The park would cooperate with members of the local community to identify the trail location.

5.2 Heritage Appreciation

Heritage appreciation is a valuing of our heritage, both natural and cultural. Interpretation, environmental education and information are aids to heritage appreciation. ***Interpretation*** refers to effective communication of our natural and cultural heritage that helps people appreciate, understand and care for it. Interpretation can be done personally, for instance by a park ranger leading a nature walk, or impersonally through signing and displays. ***Environmental education*** is generally more formal, and is usually connected to school curriculums. ***Information*** helps visitors plan their visit to the park and makes it more enjoyable by creating awareness of park features, park regulations, and recreational opportunities.

5.2.1. Objectives

- ***To encourage awareness, understanding and enjoyment of the natural and cultural features of the park.***

- ***To foster understanding of, and encourage life-long support for, Moonshine Lake Provincial Park as well as Alberta's protected areas network.***

- *To provide environmental education opportunities to visitors and to special groups such as schools*

- *To ensure that visitors gain full enjoyment of the park resources by providing information about the park.*

5.2.2 Interpretation

The park has been identified as having the visitor base to support "low level" interpretive personal services, both personal and non-personal. Personal services at this level could include periodic presentations in the form of guided walks, special events and outreach programs. All programming would be subject to staff and funding availability. Non-personal services could include displays, self-guided interpretative trails, kiosks, and adventure packs.

The core themes of these interpretation services relate to the Natural History Themes of the park and are:

- Boreal forest ecosystems
- geological features of the park and region
- aquatic/wetland ecosystems (i.e. stocking program)
- wildlife management
- cultural/historical heritage of the park and region

Since families with children are a large user group, a large portion of these services should be geared to them.

Cooperation with other agencies and industries, as well as use of volunteers, will be encouraged in the delivery of environmental education programs. Potential sources are agencies such as Land and Forest Service, Fish and Wildlife officers, local people and industries, and environmental/naturalist groups.

5.2.3 Environmental Education

School groups, day camps, youth groups, etc. will continue to be provided with environmental education programs on request.

5.2.4 Information

The park will aim to fulfill a broad range of visitor information needs for first time and repeat visitors. It will do this by keeping a full complement of park and regional information brochures at the park office and other appropriate locations in the park. Making park brochures available at regional tourist centers and including campground operators and concessionaires will also help in the delivery of information.

In cooperation with the Red Cross, the park will provide public education programs for boaters.

Campground hosts also provide information regarding rules and regulations of the park. Campground hosts were present in 1998, and volunteers for this position will continue to be recruited.
More public information about the fish stocking program through interpretative signage, notices, bulletins, park updates, etc., will be provided.

5.3 Outdoor Recreation

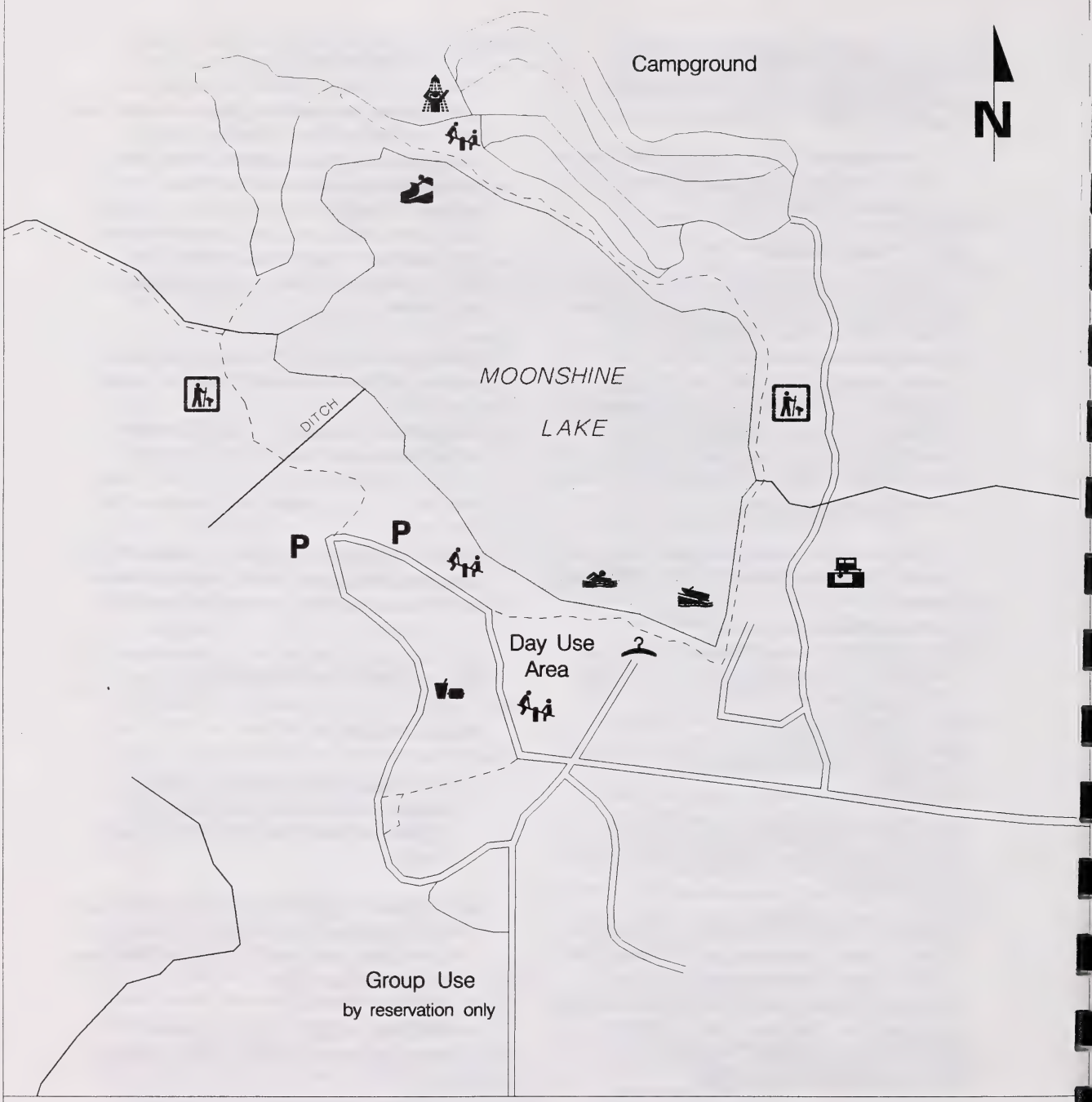
5.3.1. Objectives

- *To continue to provide high quality outdoor recreation opportunities and associated services and facilities to park visitors.*

- *To provide opportunities for private sector and volunteer involvement in the delivery of facilities and services that are consistent with park objectives.*

- *To broaden accessibility of outdoor recreation opportunities to the disabled.*

- *To foster relationships with the local community through continued provision of outdoor recreational opportunities.*



MOONSHINE LAKE PROVINCIAL PARK
FACILITIES

- P Parking
- Concession
- Showers
- Playground
- Change House
- Boat Launch
- Hand Boat Launch
- Watchable Wildlife Trail
- Trailer Dumping Station

5.3.2 Camping

Moonshine Lake Provincial Park will continue to offer outstanding camping opportunities to visitors.

It is Natural Resources Service policy to contract the operation of park campgrounds to facility operators. The park will supervise this contract through a Facility Operating Agreement. The park will continue to be operated at provincial standards.

If a facility operator is not found, Natural Resources Service will continue to operate the facility.

In the past the source of drinking water for park visitors was the lake. The water was safe to drink but was aesthetically unpleasing. Water is now hauled from the town of Spirit River, stored in a large holding tank, then treated and distributed throughout the park. This water meets provincial standards.

The number of camping units needing power has increased in recent years. The park will investigate the feasibility of increasing this service. Water and sewer hookups are not viable at this time.

Not only has the number of powered units increased, but the size of camping units has grown. In order to accommodate this increased size, renovations such as redesigning the access to the campsite have occurred on some campsites. More renovations will be done as resources allow.

A shower building has been erected, adding to the visitor services offered in the park. If possible a pay phone will be installed at the building. The other pay phone in the park is on the other side of the lake.

It has been suggested that the play area be improved in the campground area. This will occur as funding allows.

5.3.3 Day use

Day use visitors are a large component of park visitors. Recreation opportunities for this segment will continue to be offered, and enhanced when appropriate.

In the past the ball diamond at Moonshine Lake was well used by the local community, but it has fallen into disrepair. It will be rebuilt and promoted for local community use.

The park is encouraging the presence of bats to control the insect population in the park. Three bat houses were erected in the day use area during the summer of 1995. It is hoped that the bats' consumption of insects will help to control the insect population. If this experiment is successful, more bat houses may be installed on the campground side of the lake.

5.3.4 Fishing

The lake will continue to be stocked with rainbow trout.

Due to demand, the fishing pier areas have been increased to more access.

Fishing regulations will be strictly enforced to protect the fishery.

5.3.5 Water-based Recreation

Aquatic vegetation growth detracts from swimming activities in the beach area on the south side of Moonshine Lake. Control measures such as dumping sand in the swimming area have not eliminated the vegetation, and the park will investigate other methods of controlling it in this area.

It has been suggested that a swimming area be developed on the campground side of the lake. This will not occur, as the lake and shoreline there is unsuitable for development.

No gas powered boats are allowed on the lake.

Park staff will continue to enforce boating regulations and educate visitors about their importance.

The boat launch is on the southeast side of the lake. Because of prevailing winds algae bloom accumulates in this area and discourages use of the launch. There has been some discussion about moving the launch to another location on the lake, but the park will investigate methods of controlling the algae bloom before considering this option.

Learning to snowshoe on park trails

5.3.6 Trails

Hiking trails, and particularly the Watchable Wildlife Trail, are well used. The park will attempt to enhance trail use by:

- Placing more Watchable Wildlife signs along the trails at appropriate spots
- Installing summer trailhead signs
- Possibly graveling or hardening some of the trails
- Regular mowing of trails

Hiking trails are not being planned for the new park lands at this time.

5.4 Tourism

5.4.1 Objectives

- ***To continue to promote recreation opportunities to encourage visitors from outside the local area.***

- ***To continue to offer economic opportunities to local businesses.***

5.4.2. Management Actions

Although Moonshine Lake Provincial Park functions primarily as a destination for visitors from the surrounding area in both Alberta and British Columbia, it will continue to promote recreation opportunities for visitors from further afield.

The fishing opportunities at the park are a main attraction, and rapidly gaining in reputation. Along with the camping opportunities, recently enhanced with the addition of a shower building, the park hopes to attract a larger portion of the local outdoor recreation market.

The natural environment of the park has the potential to attract a growing number of park visitors interested in activities such as nature viewing and bird watching. These activities will be promoted by the park.

5.5 Public Safety

The Parkwatch Program provides visitors with the opportunity to mark their valuables for identification, and asks campers to volunteer to watch out for their neighbors.

The park will continue to provide services that enhance visitor safety in the park such as night security, enforcement of quiet hours, control of noise and dogs.

The park has a Contingency Plan in place. It includes plans for evacuation in case of fires,

windstorms, problem wildlife, and other dangerous conditions.

Park personnel will continue to provide public safety through regular patrols and enforcement activities.

6.0 Surrounding Lands

6.1 Surrounding Land Use

Land adjacent to the south boundary of the park is agricultural land. The rest of the park is surrounded by forested crown land. Much oil and gas activity, as well as some forest harvesting, occurs in the area.

6.2 Dispositions

A disposition is an arrangement between the provincial government and another party for the right to use crown land. It usually takes the form of a lease, license or permit, and allows the party the right to use the land or resources, either surface or subsurface, for a defined period of time.

Alberta Power holds a disposition of about .9 hectares for an easement for the underground power line into the park. The easement goes to the transformers only.

The new land addition has one petroleum/natural gas lease and 2 industrial mineral permits on it. As per park policy, existing leases will be honored, but as they expire, no new surface access rights will be granted on park land.

The new land addition is also part of a registered trapline. When the trapline disposition expires, it will not be renewed for the portion within the park.

Several unused road allowances still exist in the park. Natural Resources Service will request the M.D. to close these road allowances. They are:

- Surveyed roadway of the northwest quarter of Section 22 totals .29 acre as shown upon a plan at the Land Titles Office of Edmonton for the North Alberta Land Registration District as No. 300 p.x.
- 1.62 acres of the northeast quarter of Section 29 required for roadway as shown upon plan No. 3610 p.x. of the Land Titles Office.
- Statutory road allowance adjoining the west boundaries of the northwest quarter of Section 29 and the west half of Section 32 containing 11.98 acres.
- There may be other unused road allowances in the new addition. If so, Natural Resources Service will request that they be closed as well.

7.0 Regional Coordination

Parks cannot be managed in isolation from the surrounding lands. What happens on lands around the park may have an impact inside the park. In turn, the presence of a park may affect management of land adjacent to the park. Moonshine Lake Provincial Park recognizes this, and seeks to be a good neighbor with landowners and managers of adjacent lands, and with the local community.

7.1 Adjacent Land Owners/Managers

Crown land adjacent to the park on the west, north and east sides is managed by Land and Forest Service and the Blueberry Mountain Community Forest Association. Natural Resources Service will continue to promote cooperation with them so that natural heritage preservation objectives can be achieved.

The park will continue to practice a good neighbor policy with private land owners on the south side of the park. The park welcomes and appreciates their support for the park.

7.2 Local Community

Moonshine Lake Provincial Park has a history of community involvement. It began as a community gathering place for swimming, picnicking and fishing in the 1950s, and in 1959 became a provincial park on the initiative of local people. In 1960, the newly organized Moonshine Lake Athletic Association built and operated a concession booth to raise funds for local activities. The park was the home base for the local baseball team, and tournaments were common.

- Moonshine Lake Provincial Park is committed to working with local people and communities towards meeting mutual objectives.
- Local community activities will be encouraged in the park. For instance, the ball diamond is being rebuilt to encourage holding baseball league and tournament events in the park.
- The concession is now operated by private contractors. This arrangement will continue.
- Recycling stations for beverage containers are available throughout the park, with proceeds from sale of recyclables will continue to support a local non-profit organization.

7.3 Other Agencies

The park has traditionally had good working relationships with other agencies such as Land and Forest Service and the R.C.M.P. It also participates in fish stocking, water quality testing, wildlife aerial surveys, vandalism, and other activities which relate to the management of the park. It will continue to cooperate with other agencies to provide good service to park visitors.

8.0 Plan Implementation

8.1 Management Actions

This section compiles all the actions listed throughout the management plan. The actions are organized below under ongoing and projects.

8.1.1. Ongoing Actions

These are ongoing actions that mostly proceed through ongoing park operations. These tasks will be reviewed regularly by the park manager to ensure that they are carried out and that the intentions of this management plan are being followed.

- Continue to monitor water quality of the lake.
- Continue to monitor fish stocking in Moonshine Lake.
- Provide interpretation services to visitors that relate to park Natural History Themes.
- Promote the park, and particularly fishing opportunities, in local and provincial travel brochures and at trade shows.

8.1.2. Projects

These projects will require varying amounts of planning and time to complete, and will be dependent on availability of funding. Starting in 1998, a portion of visitor fees at Natural Heritage Sites will be allocated towards upgrading of existing facilities and towards development of new facilities. Some of these projects may be funded by this allocation.

- Investigate ecologically sound ways of controlling algae blooms and aquatic vegetation.
- Develop and implement noxious weed program.

- Assess need to reduce fuel load in the park, and investigate methods of achieving this.

- Along with local community, identify location of Moonshine Trail.

- Enhance use of walking trails in the park by placing signs at the trailhead, Watchable Wildlife signs on trails, and by possibly gravelling or hardening some of the trails. To be completed by summer 1999.

- Prepare information/promotion about fish stocking program. To be prepared by spring 1999.

- Investigate feasibility of increasing number of powered sites in the campgrounds.

- Investigate redesign of campsites to accommodate larger camping units.

- Improve the playground area in the campground. To be completed in 1999 if funding permits.

- Rebuild the ball diamond in the park and encourage its use. To be done in 1999 if funding permits.

8.2 Plan Review

The management plan will be formally reviewed not more than 10 years after official approval. Earlier reviews may be carried out.

Natural Resources Service will initiate the plan review. Members of the local groups and agencies who helped in its preparation will be asked to participate in the review. The general public will also be given an opportunity to review the amended plan.
The review will:

- Review the objectives and the effectiveness of the management guidelines outlined in this plan;
- Address issues that arise subsequent to the approval of this plan; and
- Revise those sections of the plan which need updating because of changing situations.

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Appendix A

Park Rangers at Moonshine Lake Provincial Park

1960-67	Lawson Scott, Chief Park Warden
	Robert Hampton, Assistant Park Warden
1967-72	Frank Linsay
1972-74	Carmine Maglione
1974-75	Ed Johnston
	Roger Reilender, Assistant
1975-77	Barry Barton, Ranger in Charge
1977-81	Dave DeLancy, Ranger in Charge
	Myles Horne and Debby Funk, Assistant Rangers
1982-90	Ed Whitelock, Ranger in Charge
1990-1995	Rob Spelliscy, Ranger in Charge
1995-present	Grant Santo, Ranger in Charge
	Monica Kirtley-Wark, Assistant

Appendix B

Fish Stocking Data for Moonshine Lake (Alberta Natural Resources Service Records)				
Year	**Month**	**Species**	**Number**	**Age**
1963	No stocking; lake treated with copper sulphate to kill vegetation after dam development			
1965	July	Pike Perch	26 24,000	Adults Fingerlings
1966	May Treated with copper sulphate	Pike	171	Adult
1967	No stocking occurred			
1968	Lake treated with rotenone to kill pike			
1969	July	Rainbow trout	41,800	Fingerlings
1970	September	Rainbow trout	60,480	Fingerlings
1971	June September	Rainbow trout Rainbow trout	2.000 60,000	Yearlings Fingerlings
1972	No stocking occurred			
1973	June	Rainbow trout	10,030	Yearlings
1974	May	Rainbow trout	9,000	Yearlings
1975	June	Rainbow trout	40,5000	Fingerlings
1976	May	Rainbow trout	40,5000	Fingerlings
1977	Major summerkill of fishery. Probably due to over population, low oxygen levels, and a gill fluke epidemic. Both rainbow trout and northern pike affected.			
1978	May	Rainbow trout	34,800	Fingerlings
1979	June	Rainbow trout	32,0000	Fingerlings
1980	June	Rainbow trout	40,000	Fingerlings
1981	July	Rainbow trout	40,000	Fingerlings
1982	Spring Winterkill of trout (<100)	Rainbow trout	40,000	fingerlings
1983	Spring Summer Bubble system installed in fall	Rainbow trout Rainbow trout	10,000 15,000	Fingerlings Yearlings
1984	Spring	Rainbow trout	38,000	Fingerlings
1985	Spring	Rainbow trout	35,000	Fingerlings
1986	Summer	Rainbow trout	27,000	Fingerlings
1987	Spring Summer	Rainbow trout Rainbow trout	35,000 5,400	Fingerlings Yearlings
1988	Spring Summer	Rainbow trout Rainbow trout	35,000 5,000	Fingerlings Yearlings
1989	Spring	Brook trout*	35,000	Fingerlings
1990	Spring	Brook trout	50,000	Fingerlings
1991	No stocking occurred			
1992	Spring	Rainbow trout	10,000	Fingerlings
1993	Spring	Rainbow trout	10,000	Fingerlings
.	In the fall the lake was treated with rotenon to kill off the pike. This time the inlet channel was treated to make sure all were eliminated			
1994	Summer	Rainbow trout	18,300	Assorted size
.	In the fall a new fountain-type aeration system was installed			
1995	Spring	Rainbow trout	14,600	Fingerlings
1996	Spring	Rainbow trout	12,400	Fingerlings
1997	Spring	Rainbow trout	12,000	Fingerlings
1998	Spring	Rainbow trout Brown trout	12,000 3,000	Fingerlings Fingerlings

*During 1989-91 the lake was not stocked with rainbow trout due to a pancreatic infection at the hatchery.

Appendix C

During the preparation of this management plan, the public raised a number of issues in response to the survey and letter sent to stakeholders. The following chart lists these issues and concerns, and identifies where they are addressed in the plan. The chart also contains issues and concerns of park management.

The issues may be mentioned elsewhere as well, but the pages indicated provide the most detail.

Issues and Concerns	**Where addressed in the management plan**
Fuel load in some park forests	Page 16 under Vegetation
Beaver damage	Page 17 under Wildlife
Mosquito control	Page 20 under Day Use
Quality of drinking water	Page 20 under Camping
Management of algae bloom and aquatic vegetation	Page 15 under Water and Aquatic Resources
Management of beach area	Page 20 under Water-based Recreation
Public education about fishery in Moonshine Lake	Page 18 under Information
Promotion of recreational opportunities in the park	Page 21 under Tourism
Enforcement of park regulations	Page 21 under Public Safety
Safety in the park	Page 21 under Public Safety
Improvement/promotion of hiking trails	Page 21 under Trails
Development of powered campsites in the park	Page 20 under Camping

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